Reviewer’s report

Title: Non-invasive evaluation of myocardial reperfusion by transthoracic Doppler echocardiography and single-photon emission computed tomography in patients with anterior acute myocardial infarction

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Reviewer: Quirino Ciampi

Reviewer’s report:

The authors evaluated whether the preserved coronary flow reserve (CFR) three days after reperfused acute myocardial infarction (AMI) is associated with less microvascular dysfunction and is predictive of left ventricular (LV) functional recovery and the final infarct size.

The authors concluded that that preserved CFR during the acute MI phase can predict the spontaneous LV functional recovery, preserved myocardial viability and the smaller final infarct size at the follow-up period.

The paper is very interesting and well and clearly written.

Major suggestions:

1. Why the authors analyzed the contractile reserve using low-dose dobutamine stress echocardiography and coronary flow reserve with adenosine, instead of dypiridamole stress echocardiography, with simultaneous evaluation of contractile reserve and coronary flow reserve?

2. The authors should reduced the length of the introduction section and add at the end the aim of the study.

3. In the Methods section authors should add and clarify the time for each exam (i.e. dobutamine stress echocardiography, coronary flow reserve, and the Gated-SPECT), and in particular, if the patients underwent, in the same day, Gated-SPECT and adenosine coronary flow reserve, because of the patients drank chocolate milk, that can reduced the effect of adenosine.

4. The authors should replace the figure 1 (color visualization of distal tract of left descending coronary artery) with 2 examples: 1) patient with preserved myocardial contractile reserve and viability and normal coronary flow reserve; 2) patient with absence of myocardial contractile reserve and viability with extensive myocardial fix defect of perfusion and impaired coronary flow reserve.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:

I declare that I have no competing interests